

2009

# The Effectiveness of Gender Specific Education on Academics and Behavior among Public Middle School Students

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Running head: THE EFFECTIVENESS OF GENDER SPECIFIC CLASSROOMS

The Effectiveness of Gender Specific Education on Academics and Behavior among  
Public Middle School Students

Stephanie A. Bliss

The College at Brockport, State University of New York

### Acknowledgements

I have to begin this section by acknowledging the only thing in this universe that gets me through the rough times...my faith in God. I know that it may sound cliché to say this, but all things happen for a reason. I am where I am supposed to be when I am supposed to be there. This process has been one of the most tedious events of my life and without prayer and support from my family I would not have gotten through this.

I have to thank my family for their constant support of my education. They expect me to be great which forces me to expect nothing less of myself. Mom, Dad, Aunts, Uncles, and Cousins, thank you. Shana and Spencer, my inspiration, thank you for keeping me motivated. I do not know where I would be if you two were not in my life. Everything that I do is because of you two. I love you. Now, my number one girl in the world, my Grandma, I love you. Thank you for all that you do, even when you don't know that you are doing it. You are the heart beat of our family and I appreciate you. You force me to maximize my potential and this paper proves that with some guidance and pushing we all can accomplish whatever we want to. I have to thank my best friends for putting up with me for the past 10 plus years. We have been through some rough times together and we have another 50 plus years to go. I hope that you are ready for the challenge. I love you because you keep me motivated to be the best at whatever I do. We are a chain that can never be broken.

I have to thank the Wilson Foundation Academy faculty and staff for welcoming me into your family. Thank you to the 9<sup>th</sup> grade house office, Mrs. Brown thank you for helping me get the data that I needed and making me laugh every day. You are a trip.

Ms. Jackson, thank you for embracing me and making me feel welcomed right from the start. Now, my site supervisor, Mrs. Scissum, thank you for taking me on as your intern under nontraditional circumstances. I have learned so much from you and I will be forever grateful. Working everyday with you has been a pleasure and you will always be a pleasant memory in my memory bank. Remember, it is 2009. I have to say thank you to the Counseling team. You all treated me as an equal and I appreciate it. I never felt like an intern and I think that made all the difference. Dr. Mathew, thank you for signing off on my thesis proposal. I really would not be able to do this without you, literally. Thank you also, for being a leader that is welcoming and approachable. These attributes translate onto your staff which in essence will translate onto the scholars that we serve.

Now, to my In Control crew, thank you for putting up with me and my crazy class schedule for the last 2 1/2 years. With your support I was able to change my life and I will be forever grateful. LaMarr, you have been more than a supervisor to me, thank you for always pushing me to maximize my potential. I thank God everyday that I was able to work for someone that values the individual and not the job. You make sure that I never stay idle. You are the definition of pay it forward, thank you.

To anyone that I may have left out or did not mention, thank you for being a part of my life. Some things are better left unsaid. All my interactions are important and nothing is by chance, these past two and a half years has truly taught me that. We meet people when we are supposed to meet them and they come into our lives for reasons that we may never know. Embrace people that cross your path, you never know what may happen. I am where I am supposed to be with the people that are supposed to be

there with me. This is where my book begins, the rest is still unwritten...

*Artist Natasha Bedingfield Song, Unwritten*

*I am unwritten, can't read my mind, I'm undefined*

*I'm just beginning, the pen's in my hand, ending unplanned*

*Staring at the blank page before you*

*Open up the dirty window*

*Let the sun illuminate the words that you could not find*

*Reaching for something in the distance*

*So close you can almost taste it*

*Release your inhibitions*

*Feel the rain on your skin*

*No one else can feel it for you*

*Only you can let it in*

*No one else, no one else*

*Can speak the words on your lips*

*Drench yourself in words unspoken*

*Live your life with arms wide open*

*Today is where your book begins*

*The rest is still unwritten*

*Oh, oh, oh*

*I break tradition, sometimes my tries, are outside the lines*

*We've been conditioned to not make mistakes, but I can't live that way*

*Staring at the blank page before you*

*Open up the dirty window*

*Let the sun illuminate the words that you could not find*

*Reaching for something in the distance*

*So close you can almost taste it*

*Release your inhibitions*

*Feel the rain on your skin*

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*Live your life with arms wide open*

*Today is where your book begins*

*The rest is still unwritten*

*The rest is still unwritten*

*The rest is still unwritten*

*Oh, yeah, yeah*

*With all my heart...Stephanie*

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### Abstract

The purpose of this research project was to investigate the effectiveness of gender separation in schools, with an aim to contribute to the growing body of literature on gender separation in the public school system. The present project analyzed a western New York public middle school's attempt at gender separation. The effectiveness of the school's gender separation practices were evaluated by using the student's grade point averages (GPA) and behavior referrals as a measure of impact. The method involved comparing the same student's seventh and eighth grade GPAs in both single and mixed gender classes. It is important to note that the students do not have all single gender classes. The classes that were not considered core classes were all mixed gender. For the purpose of this project math, English, science, social studies and physical education were considered core classes. The seventh grade GPA that was used was the cumulative GPA of the seventh grade year in single gender or mixed gender classes. The eighth grade GPA that was used was an average of the first half of the eighth grade year in single gender or mixed gender classes. The use of only half of the eighth grade year in comparison to the whole year of the seventh grade was due to the time constraints of the researcher. The discipline referral numbers that were used were generated from a discipline referral data base maintained by each individual school at the secondary level in this school district. This data base tracks student's discipline referrals consecutively as students move through the grade levels that the school provides. Like the GPAs a cumulative number of referrals was gathered for the seventh grade year and then for the eighth grade year for the same students. This study found that the all female classes

showed a decrease in grade point averages from seventh to eighth grade with a slight increase in number of discipline referrals. The male class showed an increase in grade point averages and maintained a negative correlation between grade point averages and number of discipline referrals. The mixed gender class showed an increase in grade point averages but remained unchanged in the amount of discipline referrals received from seventh to eighth grade. Implications for school counselors and other helping professionals to aid in better service for all students are provided.

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## The Effectiveness of Gender Specific Classrooms on Academics and Behavior among Public Middle School Students

In an educational system with a history of segregation along gender, racial, and economic lines, the question of whether gender specific education promotes gender equity is unclear (McWilliams, 2006). Boys and girls seem to win or lose depending on the subject matter being taught, skills, achievement level, and age factors. These variables seem to be more widely spread when reviewed in a public school environment. In the present paper the role gender specific education plays on academics and behavior is investigated. It is hypothesized that the public school system seems to be looking for ways to increase the productivity of its students academically and behaviorally through separating genders for the learning process. Educators have been looking for ways to bridge the gap between public and private schools and some believe that gender separation is the answer to the under achieving public school systems. The reason for separating girls and boys fall into two main categories: one cites difference in brain development and one with the purpose for ensuring equal opportunities for young women based on the history of education in the United States (Girls and Boys, 2008).

### Review of the Literature

#### *Education History*

According to Warrington and Younger (2003) many schools adopting the gender specific classroom style are doing so in attempt to raise boys' achievement levels and control the boys' behaviors. Historical evidence displays a vast tradition of inequalities in

education based on gender which were made easier to proclaim by gender specific education. Gender separation in public education began in colonial America, when some males were taught the basics of reading and writing to prepare for grammar school while females were generally uneducated, or given informal instruction in reading and writing at “dame schools” (Friend, 2007, p. 56).

The American system of education has undergone dramatic transformation at various times since its origin in the 1600’s, reflecting the social life and culture of the nation. The educational system even predates the word “America,” which was introduced in 1684 by Cotton Mather, a Puritan minister in New England whose sermons reflected his concerns over formal ways to rear young people. The term “education” was coined around 1531 (Horner, 1954).

In a sense the religious uproar of Europe in the 1500’s was the starting point for understanding the history of education in colonial America (Labaree, 1988). Schools were among the institutions built by the colonist. They were only outranked by the homes and places of worship. All religious leaders regarded education of young people as essential. Education provided a manifestation of individual religious denominations (Riordan, 1990). The early system of discipline was designed to mold children’s character rather than keep children in order. Conduct was incorporated into academics and given a grade by the teacher (Labaree, 1988).

The school also failed to see education as of much importance for women. In the beginning, during the 1700’s it was seen as more important for women to be home with the children than to go to school. A major exception to this backwardness of colonial

leaders in providing education for females was the Moravian seminary for girls, which opened in 1745 (Horner, 1954).

Gender separation was the norm during the creation of what we now call the American education system. Nationwide, however, attempts to educate females were sporadic, and many religious denominations, such as the German Reformed Church, opposed school learning for their daughters. Even some who supposedly advocated education for girls in the nineteenth century were referring merely to "finishing schools" as social graces that could be picked up, so that as married women the girls would have some preparation to teach their male offspring. Many seminaries were opened for wealthier girls in the nineteenth century as an alternative to male academies, but these primarily were intended to produce educated mothers and few other professional women other than teachers, hence providing the framework for the economic and social class divide in the educational system to date (Friend, 2007; Spielhagen, 2008).

The development of the public educational system was seen as a great accomplishment of the 19<sup>th</sup> century. In the beginning of the development of the system few cities supported public education. By mid century public schools had become the main educator of youth regardless of gender (Troen, 1975).

As time progressed, curriculum from the early 20<sup>th</sup> century evolved into different tracks for male and female students in the form of hands on tool mechanics for the males and home economics or office skills for the females (Troen, 1975).

Gender separation was perceived to be effective and led to the creation of two same gender public high schools in Philadelphia, one male and one female. Girl's High

School, founded in 1848, and has operated as a public, single-gender school for over 150 years (Friend, 2006). Central High School, the male school was founded in 1838 and is the second oldest public high school in the United States. Unlike Girl's High, Central began co gender education in 1983 as a result of litigation based on gender equity (Friend, 2007). As noted above the American educational system throughout the 19<sup>th</sup> century and into the early years of the 20<sup>th</sup> century, having single-sex classes were more common than not. In fact, co educational classes are relatively a new development in American education. This development became of the norm during the Progressive Era. The disciples of John Dewey and feminist urged the creation of comprehensive coeducational secondary schools that would provide a wide range of courses for all students (Spielhagen, 2008). The public school system or the tax supported education that we know of today did not emerge until the early part of the nineteenth century. Then the public schools were called "common school" (Riordan, 1990, p. 28). Common schools were coeducational in nature, but as (Feinberg, 1998) stated, the common schools were one room school houses so the separation of the sexes would be difficult given the lack of resources given to common schools. Students were however not allowed to talk to the other gender and were not allowed to play with the other gender during recess. Co education in this sense was economical decision rather than an educational one (Riordan, 1990). The change in the formation of the American educational system came as a result of the change in America and its people. It seemed that with the change in economics came a shift in the way that the American people looked at equity in education and its policies for boys and girls (Hayes, 2008). Looking at

education under these critical lenses allowed policy makers to look at the laws that governed education in America in a different light.

### *Education Law*

The Fourteenth Amendment of the United States Constitution prohibits states from denying citizens equal protection of the laws. Although the United States Constitution does not provide the fundamental right to education current equal protection jurisprudence requires scrutiny of any laws which treat citizens different based on race, ethnicity, and sex (McWilliams, 2006). Thus in the court case *Brown v. the Board of Education*, applying strict scrutiny to school assignments based on race counteracted with the equal protection clause to mean that “in the field of public education the doctrine of separate but equal has no place” (Brown v. Board of Education, 1954; Whitman, 1993) Although the logic of *Brown v. the Board of Education* has not been extended to gender, it seemed reasonable that the court’s interpretation of the equal protection clause mandates some form of educational equity along gender and race lines, in addition many states have created legislation related to equal rights and are open to interpretation by the courts (Friend, 2006; McWilliams, 2006).

In the face of accumulating evidence that schools are losing alarming numbers of black males, creating public schools to address the needs of African American males are being proposed. Haunted by the promise of a bleak future for millions of African American young men and being aware that single-gender programs can face legal and political opposition educators are looking for programs to meet the academic and emotional needs of African American boys that are being left behind the educational

curve (Gewertz, 2007).

Title IX of the Education Amendments was passed in 1972, marking significant progress in the struggle for gender equity under the law. Title IX states, “no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under an education program or activity receiving federal financial assistance”, generally this meant that admission and placement decisions in public schools could no longer be based upon gender. There was a clause in Title IX exempting elementary and secondary schools. This exemption was created because Congress was unsure of the effect that such a requirement would have on a young child (McWilliams, 2006).

In the last thirty years the United States Supreme Court has only spoken three times on the issue of gender specific education. Yet these few times combined with federal legislation have changed the legal terms for treatment of gender in the educational context (McWilliams, 2006). There was only one Supreme Court decision to date that addressed gender specific education on an elementary and secondary level, which was the 1977 case of *Vorchheimer v. School District of Philadelphia*. This case concluded that it was unconstitutional for the female student to be denied acceptance to a school based solely on her gender. In many ways the debate over gender specific education has mirrored the struggles of the feminist movement (McWilliams, 2006). There are obvious biological differences between the sexes, but courts, and legislative bodies have struggled to determine when those differences justify disparate treatment.

As educators continue to look for ways to increase the productivity of students

the No Child Left Behind Act of 2001 (NCLB) attempted to give school districts additional flexibility to experiment with gender specific education (McWilliams, 2006). NCLB provided three million dollars in federal grant money for gender specific education, in addition the NCLB requires the United States Department of Education to issue guidelines that provide flexibility in gender specific education but that are in compliance with the Title IX and the equal protection clause. The clause states that there should be regulation within gender specific schools and gender specific coeducational schools. Under the proposed regulations the objective may be to provide, a diverse education and or other educational options to students that may need additional support (Salomone, 2006). In both cases the gender specific nature of the class must be substantially related to the achievement of the objective, and a coeducational class of the same subject must be offered as well (Salomone, 2006).

These legal and policy arguments have sent educators, counselors, and policy makers into frenzy, searching for research and or evidence to justify the trends to create gender specific classes in public schools. Between 2000 and 2003 alone, 15 gender specific public schools opened, mainly in urban areas. Some of these schools were new schools including charter schools and others were reconstituted schools that were former coeducational programs and failing. Some educate boys and girls in separate classrooms within the same facility. Others are totally gender specific. In addition many coed schools have made certain classes gender specific, particularly in math and science where girls have traditionally lagged behind their male counterparts (Salomone, 2006).

Many of the studies found supporting the change to gender specific education

lack the scientific rigor that the Department of Education now requires in order to support educational reform (Salomone, 2006). Unfortunately, when the Education Department issued the single-gender guidelines, there was no guidance to how to make the change work (Single-sex classes may come soon to a school near you, 2007). Critics now argue that federal law is going down a risky path. According to Salomone (2006) the federal government is on the brink of officially approving gender specific education, an educational approach that lacks overwhelming justification backed by scientifically based research. The United States is in the midst of major changes in the American education system. Historically, school officials have been wary of using funds portioned for gender specific education without explicit guidelines from the Department of Education because of the threat of legal action; due to the changes in the NCLB there is no longer a threat (McWilliams, 2006).

Education policy makers currently advocate enhancing the achievement for diverse populations while taking steps for long term educational reform. Achieving educational reform, while improving academic achievement is the goal of legislation, school districts, teachers and counselors (Badgett, Hoffman, & Parker, 2008).

It is known that there is a difference in the learning styles of boys and girls, and the question remains will gender separation in schools address these differences? With regulations to strengthen the NCLB law focusing on improved accountability, parental notification for supplemental services and school choice, school districts are looking for ways to improve academics and gender specific education seems to be the solution (Miners, 2008).

*Gender Difference in Learning Style*

The learning styles of boys and girls differ in ways that were not previously understood and that were not well recognized in 1972 when Title IX was passed. There was a sensible reason to believe that differences in educational style were biologically programmed, reflecting innate biological differences between the sexes (Sax, 2001). Sex differences in brain development were reflective of the differences in learning styles of boys and girls.

*Boys*

It is important to understand the difference in brain development in males, so that educators can better teach them. If you teach the same subjects to boys and girls in the same way, by age 12 or 14 you will have boys thinking that art and poetry are for girls and that math and science is for boys (Giedd, 2007). Thirty years ago feminist argued that the classic boy or rough behaviors were a result of socialization, but now scientists believe they are an expression of male chemistry. Sometime in the first trimester, a boy fetus begins producing testosterone and bathes his brain in it for rest of his gestation. That exposure alone wires the male brain differently than the female brain (Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006). This was illustrated in a Dutch study published in 1994, where doctors found that when males were given female hormones, male's special skills dropped but male's verbal skills improved (Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006).

Giedd et al. (1999) conducted a study on the prefrontal cortex, a knobby region of the brain directly behind the forehead that scientist believe helps humans organize

complex thoughts, control impulses, and understand the consequences of behaviors. Giedd used brain scans to show that in girls the prefrontal cortex reaches its maximum thickness by age 11 and over the next decade continues to mature. In boys this same process is delayed by about 18 months (Blumenthal, Castellanos, Giedd, & Jeffries, 1999; Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006).

Boys in adolescents used their brains less effectively. Using a MRI, the brain was tested and the activities of patterns in the prefrontal cortex of children between the ages of 11 and 18 were revealed (Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006). When shown pictures of fearful faces boys used both sides of the brain, showing a less mature pattern of brain activity when compared to girls who's activity was similar to an adult (Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006). In another study researchers found that in kindergarten boys and girl's information was processed at about the same speeds. In early adolescents, boys were slower than girls, and by age 18 boys and girls were processing with the same speed and accuracy (Tyre, 2005). Scientists caution that brain research does not tell the whole story and many factors such as temperament, family history, environment, and resiliency also play big roles in the development of boys (Tyre, 2005).

Factors such as race also play a role in the development of gender specific education and its effectiveness. It is interesting that there has been little theoretical or empirical attention given to gender processes within the literature on minority education despite consistent gender differences in achievement and attainment among African American youth. It seems that little consideration for possible gender variation

in race-related experiences that may help to explain consistent differences in African American boys' and girls' achievement and performance (Chavous, Cogburn, Griffin, Rivas-Drake, & Smalls, 2008). Stereotypes around race and gender in United States society often place African American males in a negative light relative to males of other racial groups and African American females (Chavous, Cogburn, Griffin, Rivas-Drake, & Smalls, 2008). Research indicated that African American boys often received less preferential or more negative treatment in school settings. These treatments include harsher disciplinary classroom practices, more negative feedback from teachers, and more social exclusion by teachers and peers relative to other boys and girls (Chavous, Cogburn, Griffin, Rivas-Drake, & Smalls, 2008).

In classrooms where teachers constantly put emphasis on language and sitting quietly and speaking in turn, the differences between boys and girls regardless of race can be painfully obvious. Girls become the "good" students and boys become the "bad" students (Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006).

Research by Swinson (2001) suggested that teachers assume boys will behave badly and discipline them five times more than girls. Schools offer little opportunity for physical activity, and boy's natural boisterousness is often branded as poor behavior (Gilbert, 2007; Hayes, 2008; Swinson, 2001). Hayes (2008) suggested that single-sex education would provide the challenges that boys need to achieve their full potential. When the girls were removed from the classroom boys were able to let their guard down and reveal the caring and nurturing side of themselves (Mahan, 2008). It seemed that when boys were in coeducational classes they were not able to show the sensitive

side and tended to act out. These actions in turn allowed for boys to be diagnosed with a learning disability (Jones & Myhill, 2006; Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006). Seventy percent of all school age children that are diagnosed with a learning disability are boys (Tyre, 2005). Boys learn differently than girls do and it seems that the educational system was set up not to teach boys in the way that boys learn. Boys favor visual processing and lack in the hand-motor control that girls develop in early years. Boys would rather do anything than express their feelings. For these and other reasons, boys tended to have trouble paying attention in class. They often ignored instruction and did sloppy work. Boys were punished for outburst, controlled and medicated simply for behaving like boys (Gilbert, 2007). Boys often developed aversion to school which in turn perpetuated the thoughts of educators that boys do not want to do work and cannot focus (Gilbert, 2007). Gilbert (2007) suggested that the American school system was continuing to feed outdated gender fantasies. The time has come to support experiential options like single-sex schooling and educate teachers and administrators in the different ways that boys and girls learn.

When boys arrive at schools today they enter a world that is dominated by females. The teachers, administrators, counselors, and other building staff are majority female. The girls around them read faster, control their emotions better, and are more comfortable with expressing their feelings (Gilbert, 2007). In turn many boys are growing up with a female as the head of the household. One of the most reliable predictors of whether a boy will succeed or fail in high school rest on a single question: does he have a man in his life to look up to? More often than not the answer to this

question is no. High rates of single motherhood have created a generation of fatherless boys. This is true among the rich and poor, an increasing number of boys are growing up without a biological father (Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006). Psychologist said that extended family such as grandfathers and uncles can help. In neighborhoods where male role models are scarce, the high school dropout rates are astonishing. More than half of African American boys who start high school will not finish (Juarez, Murr, Springen, Tyre, Underwood, & Wingert, 2006). It is imperative that educators know all factors that attribute to boys educational makeup, knowing just how they learn is not enough for boys to be successful academically and behaviorally in school.

Educators must however, take into account the learning styles of his/her students in order to teach them effectively. The differences in learning styles of males and females may be noticed in physiological ways (DePape, 2006). Corso found that girls hear, on average two to four times as well as boys. This in essence could mean that given there is more likely than not a female teacher, boys may not hear a soft spoken teacher as well as his female counter parts and may be perceived as not listening or having off task behavior (Corso, 1959). Associated with learning styles is the tendency towards deductive or inductive reasoning. Males tended to be deductive in there conceptualization which may explain why males tended to do better on multiple choice exams (DePape, 2006). Also, traditionally girls take languages, while boys do better in math and science. There is some evidence that single- sex schooling avoids this disparity (Phillips, 2005). Boys tended to feel more comfortable taking arts subjects when in

gender specific classes which may make the boys a better student overall (Phillips, 2005).

One disparity early on is the early exposure of education for students today. In the past, the objective of kindergarten was to get acclimated to the school system and learn how to socialize with other children in the same age range. Kindergarten of the 21<sup>st</sup> century seems to be a place where students are focusing on academics rather than socialization and acclimation (Sax, 2005b). While learning literacy and numeracy seems to be good on the surface, five year old boys do not have the fine motor skills necessary to write the letters of the alphabet (Sax, 2005b). A Virginia researcher found that boys were years behind girls in brain development that is responsible for fine motor skills. The main point is that, the modern form of kindergarten is not developmentally appropriate for the five year old boy (Sax, 2005b).

Another factor in learning styles is the way that males and females cope with failure. Males tended to see failure as relevant only to that subject area. Males may be protecting themselves from generalizing failure to other factors in life because they see such feedback as limited in it uses for that particular area the feedback is relating to (DePape, 2006). Teachers and educators may be able to aid students better in dealing with failure if in a single-gender classroom where most students are coping with failure in similar ways (DePape, 2006).

Schools are one of the social contexts where gender appropriate behavior is defined and constructed. Schools can be the place where societal norms are reproduced or the place where developing non-traditional gender identities are fostered (Jones &

Myhill, 2006). Successful single-sex schools have everything to do with adjusting to learning style of the genders (Single-sex classes go public, 2006). On the other hand gender specific classes could become dumping grounds for boys the schools don't want to educate. There was also a suggestion that the all male classes can become hyper-masculine environments that reinforce negative behaviors (Cooper, 2006). Some educators said that having gender specific education allowed for the all boys classes to be less guarded and allowed for the boys to be able to reveal the nurturing side. Hence the importance of educating the teachers, counselors, and administrators on gender specific education, to avoid the pitfalls gender separation (Mahan, 2008). Some say that girls must be in the educational environment to provide some order. According to Lavy (2008) having girls in class with boys relaxes the educational environment. Girls lead to more cooperation among students and teachers, better relationships between student to student and student to teacher (Hayes, 2008).

### *Girls*

Throughout the history of education women have been subjected to intermittent waves of resistance from their male counter parts in various forms of discrimination. This resistance has challenged the woman's place in society (Salomone, 2003). Throughout history the growth of the public education system led to the need for more teachers, and soon teaching became the extension of motherhood. Preparation for teaching became another justification for educating girls in the public school system (Shmurak, 1998).

Feminist continued to push for coeducational systems to ensure equal

educational opportunities for girls. Like racial and ethnic minorities, women have long been excluded from the educational process (Riordan, 1990). Advocates for coeducation argued that when girls were learning with boys, girls tended to do just as well or better than boys academically (Shmurak, 1998). According to Salomone (2003), Clarke, a respected physician of the late 1800's warned that if girls attended secondary and higher education with boys, there would be adverse effects on the woman's reproductive abilities (Salomone, 2003).

Despite the variation of opinion coeducational schools became the norm for the American educational system. Subject gender bias came as a direct result of coeducational schools. English and foreign languages were considered feminine subjects, while sciences and math were seen as masculine subjects. Research also indicated that girls did not feel comfortable speaking in classes and received less attention than that of boys while in coeducational classes (Jenkins, 2006; Pollard, 1998). Over the course of years the uneven distribution of teacher's time, energy and attention given to the girls may have taken its toll on girl's education. Research indicated that girls received more sexual harassment in coeducational schools. These along with other factors have led researchers and educators to conclude that coeducational schools negatively influence the attitudes, achievement, course enrollment and career choices of girls (Jenkins, 2006). A 1992 study by the American Association of University Women (AAUW) revealed that girls in coeducational schools or classrooms were not expected or encouraged to take higher level math or science courses. Another study by the AAUW found that girls were more likely than boys to have their abilities in math and science

overlooked. Despite these pitfalls, girls at a younger age were more likely to be identified as gifted or advanced. However, due to the culture, girls were more likely than boys to fall off the gifted track in high school due to the peer pressure to hide her intelligence (Jenkins, 2006).

Other research showed that when girls are in gender specific classrooms in math and science they feel more comfortable in their abilities. Girls seemed to worry less about how they appeared to boys, and girls have more opportunity to participate in class. This is to be so due to the fact that boys, who are more confident in math and science, dominated discussions and the teacher, tended to call on the boys more than the girls (Boyd & Kirschenbaum, 2007). While boys consistently outscore girls in math and science, girls also outperform boys in other subjects. Girls consistently outscore boys in reading and writing assessments at fourth, eighth, and twelfth grade levels. Other research showed that overall; girls received higher grades than boys. Girls also repeated a grade at lower rates than boys and are less likely to drop out of school (Jenkins, 2006).

Given that girls seemed to score better overall on test than of their boy counterparts, girls do have trouble acclimating during the middle school years. Carol Gillian, a pioneer on gender difference in education states that “girls are confident at 11 and confused at 16”. Gillian emphasized the importance of connection and the relationship building process among female students, which translated into the move towards group work in classrooms throughout American education (Salomone, 2003, p. 69).

Despite the disparities that girls seemed to have had in education, currently the American educational system seems to be geared towards girls, hence the development and frequency of group work activities in schools across America (Salomone, 2003). Also the majority of teachers were female and it seemed that teachers tended to teach the way that they learn; hence making the female students have an advantage in learning over the male students (Tyre, 2005). Also females had more oxytocin, a hormone that is linked to bonding, which helps the girl to learn better while in group activities (Tyre, 2005).

According to the United States Department of Education data, girls spent more time on homework, participate in more Advanced Placement (AP) courses and enroll in high level math and science courses at slightly higher levels than boys (Alonso, Gibson, Mael, Rogers, & Smith, 2005; Salomone, 2003). Girls were more involved in extracurricular activities such as, student government, honor societies, school news papers, and debating clubs (Salomone, 2003). While in a gender specific classroom or school, girls were reporting a sense of empowerment and learned that excellence has no gender preference (Flowers, 2005). This may be so, because girls tended thrive in non competitive, collaborative learning situations. Girls were more likely to keep records, set goals and ask teachers for help with class work or home work. Girls enjoyed short stories and novels, which translated to the advantage girls, have on boys in reading and writing (Haag, 1998; Sax, 2001).

Girls seemed to learn better in environments that were more quiet and orderly (Separating the girls and boys, 2006). Perhaps if the teacher or the classroom is too

loud, the female student would not be able to concentrate on the material being given (DePape, 2006). Females preferred inductive exercises while learning; this was why girls favored written exams versus multiple choice exams. Girls often preferred using manipulatives to learn, opposed to boys who learned more easily from the chalk board (DePape, 2006). When talking about learning style in girls one must discuss how girls interpret failure. Sax (2005b) indicated that girls generalize the meaning of their failures because girls interpret their failure as a disappointment to adults. Because girls view the feedback that they are given as a reflection of their abilities, failure may lead girls to incorporate the feedback into a more general view of themselves instead of just in the particular subject area that the failure was in (DePape, 2006; Spielhagen, 2008).

Girls did better solving math problems when the problem is imbedded in a story. Girls enjoyed assignments that were more open ended, preferred independent research projects, and tended to enjoy role playing and skit development that would help summarize concepts that were previously learned. Girls were also more verbal and engaged in more classroom discussion (Spielhagen, 2008). According to Tyre (2005) girls had more active frontal lobes, stronger connective waves between the brain hemispheres, and language channels that mature earlier than boys. The difference in brain development may attribute to the learning difference between boys and girls.

There was no doubt that the overall gender gap for girls has narrowed, however there was still evidence that the biological differences between male and females do attribute to the differences in learning style (Salomone, 2003). It is important to know the roles that educators and teachers can play in maximizing the learning of each

gender to capitalize on these innate differences.

### *Teaching Style and Perceptions*

Perceptions about gender differences have important implications for educational expectations by teachers, parents, and students. Feminists argue the importance of presenting all students with a curriculum that offers models of excellence for males and females without any regard for the perceived abilities of each gender (Spielhagen, 2008). The feminist stance was in direct response to the notion that while in a classroom girls do not receive the same education per se as the boys do, due to the teachers teaching style (Spielhagen, 2008). The goal of a teacher was to help students look more critically at his/her specific learning goals and to self evaluate realistically regardless of gender (Spielhagen, 2008).

The American educational system has changed over the years. Kindergarten use to be a place where kids would learn how to get along with other kids his/her own age. Now, kindergarten is a place where early exposure to reading and writing is supposed to guarantee improved academics for the child's future in education. The problem is that early exposure to reading and writing is not guaranteed to improve the child's educational abilities. This early exposure can do more harm than good when boys and girls are not developmentally ready to read and write (Sax, 2005b). What has been found in kindergarten classrooms across America are groups of girls learning to read and write and groups of boys that are not developmentally ready to read and write at the level girls are. This leaves boys to be placed in alternative groups that foster learning by playing with toys such as blocks. Segregations in the kindergarten classroom seem to

begin boy's negative feeling about school and foster negative feelings about boy's capabilities academically in comparison to the more advance girls (Sax, 2005b).

It was typical for teachers to report that in the all girl's classes teachers were able to move through the material faster that in the boy classes. Also, teachers said that the girl's classes were easier to teach than the boy classes (Spielhagen, 2008). Teachers reported that in the boys classes it was necessary to use bribery tactics to have the boys complete work such as, "I'll bet you a dollar you can't finish this by the bell" (Spielhagen, 2008, p. 48). In order to learn these techniques teachers have to be trained in the ways that each gender learns or they learn on the job at the expense of the child's education (Sax, 2007).

As discussed previously, a teaching strategy that is used across the United States is the use of group work in the classroom among students. Teachers tended to use group work to promote collaborative learning. In studies that examine girls and boys approaches to group work, evidence has been provided to support the notion that girls and boys approach group tasks in different ways (Sauntson, 2007). Girls emphasized collaboration and cohesiveness and boys emphasized individuality and competition. These differences among the genders seemed to be found across various age groups and course subject areas (Sauntson, 2007). Davies (2005) found that girls formed cooperative learning groups in which girl's use of certain linguistic features promoted a more collaborative learning environment. When teachers were able to hone in on these particular differences in gender when using group work as a teaching style students were able to learn more and in essence be more productive students in that particular

subject area (Davies, 2005).

Teachers may be apprehensive about teaching single-sex classes because they were not provided with the proper training or that they were forced to teach gender specific classes by building administration. When put in these positions teachers were not excited about teaching gender specific classes and enter teaching those classes with gender bias or anger (Flannery, 2006). To be successful in teaching gender specific classes' teachers need both the choice and training to know how to teach each specific gender. A gifted teacher of girls will care about the student not just how she is doing academically. A gifted teacher of boys will know how to get the boys moving and use more animation when speaking to the class, boys respond to louder instruction than girls do. One teacher reported that teaching both genders in one room was like teaching two different grades at the same time (Flannery, 2006). When working in gender specific classrooms or schools teachers, counselors and educators may be able to custom tailor the learning environment for each gender. Educators must know that having competition for boys academically may aid in having higher achieving boys on test (DePape, 2006; Wojcieszak, 2006).

An eighth grade history teacher reported that having single gender classes was a way that teachers could focus on what each gender was interested in and the tone of each class was different (Singleton-Rickman, 2007). Like the eighth grade history teacher, many teachers were strongly committed to the idea of gender differences in learning. Some teachers believed that gender difference in learning influences attitude to school, motivation, maturity, and responsibility in students. What tended to happen

was that teachers in coeducational setting did not recognize the bias that they had against a student's gender. The attitudes that were later revealed showed that teachers viewed girls as working harder than boys, having better motivation, and being more cooperative in class (Jones & Myhill, 2006). The fact that teachers may have differing expectations of each gender was a repeated finding in various research studies.

Depending on the context boys or girls are at a disadvantage. Girls who are underachieving in math or science would more likely than not have a teacher with low expectations for the girl in math and or science and the same with boys in reading and writing (Jones & Myhill, 2006).

When talking about teaching style one must talk about classroom management skills. Researchers argued that teacher's management of classroom activities among the female students was that girls are silent and patient, and that verbal involvement by girls was positioned as less important than girls being attentive and listening (Gray & Leith, 2004; Jones & Myhill, 2006). This conscious or unconscious act has teachers assisting males and females in unequal ways in the classroom (Jones & Myhill, 2006). Contrasting perspectives on gender inequities in classroom management are offered by those that argue that teachers often ignore girls, while boys dominate the teacher student interaction. When surveyed, teachers increasingly define his/her ideal student as having female characteristics (Jones & Myhill, 2006). It seems that gender bias is happening at an unconscious level among teachers and when boys are being boys they are not the ideal students teachers want to teach. In a study about classroom equity Gray and Leith (2004) found that teachers were aware of the stereotypes and gender

bias in the classroom. Teachers note that stereotypes were perpetuated when it was asked that the boys help lift heavy items for the female teacher or if the boys are whining to tell him not to act like a girl (Gray & Leith, 2004). It is important to know that in classroom climate, classroom management, and classroom structure researchers regard these entities as functions of the teachers. However, as with the case of all teacher effects, the students involved have to be considered in the classroom management, climate and structure (Cheng, Marsh, & Martin, 2008). It seems that changing the gender of the classroom or the curriculum cannot be the only method of expecting significant change in the educational system. One has to address the teacher's gender biases in order to maintain change in the educational environment for fairness for all students (Cline, Hanlon, & Thatcher, 1999).

It was hypothesized that boys would benefit more from male teachers (Cheng, Marsh, & Martin, 2008). Cheng, Marsh, & Martin (2008) found that there were not significant differences in school motivation for boys when taught by a male teacher. Educators are recruiting males as teachers to support the notion that males will better prepare male student for the future, even though there is little empirical data to support this effort (Jones & Myhill, 2006; Lingard, Martino, & Mills, 2005). These studies seem to support the notion that if trained properly anyone regardless of his/her gender can teach and be successful with both genders.

According to Friend (2007) the issues of differentiated curriculum and separated educational settings based on gender are similar. With the historical lessons learned from the inequities existing in schools, the question arises as to how segregating schools

by gender would be different from segregating schools by race? The quality of education given in all schools should be the same, and all students should be afforded the same opportunities (Friend, 2007).

Spielhagen (2008) suggested that teachers need to be provided with more material on the brain functions of males and females and instructional techniques that tailor to each gender. It is imperative that educators continue to strive to be the best teachers, counselors and administrators so that students may learn emotionally, socially, and academically in single and or mixed gender classrooms (Spielhagen, 2008). There are various reasons why educators want to change the current educational system. Changes will only come to fruition by the national educational system if researchers continue to prove or disprove various hypotheses for change, including but not limited to gender separation in the public school system.

#### *Research/Statistics in Gender Separation*

Concern with the underachievement of the public education system remains a dominant force with the national department of education. Results from national examinations show that girls tended to outperform boys and school-based interventions typically focus on making classrooms more male friendly (Gray & Wilson, 2006).

Supporters of single sex reform look at schools such as an elementary school in Deland, Florida, where fourth graders were randomly assigned to either single sex classrooms or mixed gender classrooms. At the Woodward Elementary school in Deland, Florida among the mixed gender classroom, 57 percent of girls and 37 percent of boys passed a state writing test. In the single sex classrooms at the same school, 75 percent of girls

and 86 percent of boys passed the state writing test (Sax, 2005a). The Woodward elementary school's attempt at gender specific education may suggest that separating students by gender increased academics for both genders, not just the boys.

The National Collation of Girls Schools, an organization that holds information on private all girl schools, reported a 24 percent increase in enrolment between the years of 1991 and 2001. There were a percentage of schools in the National Coalition of Girls that reported enrolment capacity increased to 68 percent from 24 percent a decade earlier (Chaker, 2006). The increase in enrolment in all female schools seemed to be due to parent's involvement in seeking ways to increase student's academics (Chaker, 2006). The education department argued that the option for single-sex education should not be only afforded to families that can afford private school (Chaker, 2006; Friend, 2007).

Most studies of single-sex schools have been either in private schools or in countries outside the United States (Haag, 1998; Salomone, 2006). It is important to note that student's characteristics change considerably between public and private schools and between the United States and other countries (Friend, 2007; Haag, 1998; Salomone, 2006). When looking at the research of private and overseas schools, policy makers may want to take these confounds into account. Data suggested that parents and students that choose single-sex schools were more motivated and achievement oriented than the average student (Friend, 2007). Therefore, the higher achievement rate in single-sex schools may be due to the nature of the student and family rather than the school alone (Friend, 2007) .

Another confound in the success of single sex schools seems to be

socioeconomic status (SES). According to Riordan (2002) disadvantaged students in single-sex schools, compared to students in coeducational schools have been shown to have higher achievement outcomes on standardized test. Students with low SES attending a single-gender schools seemed to have higher levels of leadership skills, do more homework, take a harder course load, and have higher educational expectations than those of the same SES in coeducational schools (Riordan, 2002).

When reviewing the nature of success of single-sex education one must include race and ethnicity. According to Riordan (1990) minority females profited the most from single-sex education, followed by minority males, and then by white females when sampled in a private catholic school. Overall, women, regardless of race who graduated from single-sex schools were found to have higher cognitive ability after seven years of being out of high school than women who graduated from coeducational schools (Riordan, 1990). As Hayes (2008) stated, the sooner educators regard gender as a factor in learning differences among students, the sooner boys in the public school system will approximate the academic success of girls. In 2007, 66 percent of girls achieved five or more passing grades that were A through C compared to 57.1 percent of boys (Hayes, 2008).

Viewing single-sex education using a more international lens suggested that single-sex education is working to improve the overall academic achievement in students. An Australian study (Rowe, 1988) reported that over a six year period the Australian Council for Educational Research (ACER) studied over 270,000 students from singles-sex and coeducational schools. ACER found that boys were better behaved in

single-sex schools than boys in coeducational schools. The report also suggested that the coeducational schools are limited to accommodate the differences in cognitive and social development of both genders (Sax, 2008). Another international study that supported the use of single-sex schools is that of the National Foundation of Educational Research's (NFER) study in England (Benton, O'Donnell, Schagen, Schagen, & Spielhofer, 2002). This study reported that with 2,954 high school aged students, the single-sex public schools had a better academic performance than the coeducational schools. After controlling for students' academic ability, both boys and girls did better under the single-sex circumstances. Specifically girls at all levels scored better and boys that were at the lower end academically tended to score higher than boys in the coeducational school environments (Benton, O'Donnell, Schagen, Schagen, & Spielhofer, 2002). This report suggested that schools that were smaller typically about 180 students tended to score the best (Sax, 2008).

Like class size there are other confounds that determine the effectiveness of schools. There are varying ways of creating gender specific education (Badgett, Hoffman, & Parker, 2008). As stated by Badgett, Hoffman, & Parker (2008) Single-Sex Instruction (SSI) consists of students learning in a gender specific classroom while in a coeducational school. Single-Sex Education (SSE) consists of students learning in a single gender school building rather than simply in a single gender classroom. Lingard, Martino, & Mills (2005) found that teachers of boys in SSI had trouble relating to male students. The trouble teachers were having being able to relate to male students, resulted in fostering gender stereotyping and did not aid in changing the boys' behavior.

Boys have also reported that they enjoy the coeducational setting of school because they were able to concentrate better on their work and that girls are easier to work with than the other boys. (Badgett, Hoffman, & Parker, 2008). According to Haag (1998) achievement has come from SSE and not SSI. There is limited research on SSI and more needs to be done to truly have an educated opinion on SSI's implications for students. Most of the research in gender specific education has been in affluent private schools compared to coeducational schools. The implications that single-sex schools are better are skewed due to SES and the cultural makeup of each school it is being compared against (Gilbert, 2007).

According to (Wojcieszak, 2006, p. 3) single-sex classes are not realistic and are not preparing kids for the "real world" and according to one student school "feels like jail or something". Eliot (2008) stated that there are studies that support single-sex education as more attractive than those that support coeducational education. Eliot suggested that success in single-sex settings are not only due to the gender separation but to high expectations, dedicated faculty, family involvement, and student's investment. Girls and boys can learn from a high competent and cooperative environment regardless of its gender specification. Eliot (2008, p. 11a) said, "boys and girls have much to learn from one another, whether its academic skills, relational styles, or mutual respect" parents send their children to school to expand his/her mind not to limit possibilities by separating them from the other gender (Eliot, 2008).

According to Jenkins (2006) the totality of the research suggested that both genders have experienced varying forms of discrimination, unfair educational

treatment, stereotyping, and gender bias. There is achievement data that supports disparities in both genders and data to state that each gender is improving academically (Jenkins, 2006). Educational research has suggested that in certain circumstances single sex education has provided benefits for some students and coeducational education had provided some benefits for some students (McWilliams, 2006). But the questions remain: for what students? Under what circumstances does single-sex education become an option? And who makes the decision as to who gets to go to the schools (McWilliams, 2006)?

### *Summary*

Exploring single sex education has been a way to address some major concerns in the American educational system. Urban school districts seem to have the troubling decision to make as to what to do to reform the public education system (Jenkins, 2006). Few definitive conclusions can be made about the overall impact of the current efforts to have gender specific classes or schools in the public education system. This limitation is due the disparity in the goals of gender specific classes, the debate between SSI and SSE, and the need for systematic long term research (Pollard, 1998).

While educators are trying to figure out what is best for educational reform, they may want to pay attention to the laws that govern the system. If educators develop single-sex public elementary, middle, and high schools, they should act with a clear understanding of the constitution. This understanding should guide educators to develop a beneficial program that is fair and just for all students (Jenkins, 2006).

The argument of single-sex and coeducation is a complex debate. There are pros

and cons to either side. If there is even a small inclination that separating students by gender will produce stronger academics, emotional/social skills, and career development in students, single-sex education should be considered a viable option for students and parents (Riordan, 2002; Sax, 2008). Historically, coeducational schools were developed as a more economically efficient way to educate (Riordan, 1990). It is now important to look at educational reform as what is best for the students involved, which essentially will affect all other facets of the United States of America. Conditions around gender roles and expectations have changed vastly in the United States since the research on gender issues in education was initiated (Campbell & Wahl, 1998). We have to be cautious with our use of older data and carefully use our newer findings in the subject of gender specific education to do what is best for all students (Campbell & Wahl, 1998).

### Method

The following describes an approach that many urban school districts in the United States are using to improve behavior and academics among students that are falling behind. As educators look for answers to close performance gaps among genders the proposition of gender separation is looking like a worthy alternative to improve schools performance (Gurian & Stevens, 2008). This specific school in western New York decided to follow the trend of gender separation that many urban districts are exploring.

*Research Design*

The study used archival data that was available to school counselors. Grade point averages and discipline referrals are stored information about each student in school being studied. Grade point averages are an indicator of student's academic ability while in middle school. This school used a 0-4.5 scale as a way to calculate grade point average. Discipline referrals are a way that teachers can document behavior problems with specific students. Grade point averages and amount of discipline referrals was used as a way to determine if gender separation is a valid way to increase academics and decrease behavior problems while in the class room for students at this public school. Differences in grade point average were analyzed from each group as a way to assess the impact of gender separation on academics. Correlations were made between the amount of discipline referrals and grade point average as a way to determine if grade point averages are an indicator of discipline problems among students.

*Setting*

The study was conducted in an urban school district in western New York. The school is considered a Foundation school, which consists of seventh, eighth, and ninth grades. According to the New York State Report card, approximately 81% of students that attend the school where the research was done identify as African American. 7% of students identified as Hispanic or Latino, 3% identify as Asian or Native Hawaiian/Other Pacific Islander, and 9% identified as White. Sixty three percent of students are eligible for free lunch. Twelve percent of students are eligible for reduced price lunch. The school has a 90 % student stability rate. Student stability determines if students tend to

stay at the same school for the next year of instruction. The annual attendance rate was approximately 90 %. The student suspension rate was approximately 31%. The total enrollment number of students was 937.

### *Participants*

As a means to increase student's achievement in math, English, science, social studies, and physical education this school began gender specific education using SSI in the academic year of 2007-2008. The students that were used in the study were in seventh grade during the academic years of 2007-2008 and in the eighth grade during the academic year of 2008-2009. There was no specific reason for student to be placed in gender specific or coeducational classes. Parents could request that his/her child be placed in coeducational class.

During the research period there were 324 eighth graders enrolled at this middle school. Of the 324 eighth graders a sample size of 56 students was used. Seventy three percent of students used in the study identified as African American, 14% as White, 12% as Hispanic/Latino and 1% as Asian/Pacific Islander. Of the 56 students 10 students were in coeducational classes, 24 students were in all girl classes, and 22 students were in all boy classes. This sample size is reflective of the classes that were truly gender specific and contained an equal amount of coeducation.

### *Procedure*

Archival data was collected by the administrative assistant for students that were in gender specific classes and coeducational classes in the previous year while in the seventh grade. Archival data was also used for these same students as eight graders

still in gender specific classes or coeducational classes. Grade point averages were taken from report cards of each individual student (Appendix A). The grade point averages were given to the researcher in a Microsoft excel file by the administrative assistant. The information given to the researcher did not contain any identifying information about the students being used, such as age, date of birth, or school identification number. The data was sectioned by gender and coeducation. The cumulative grade point average of the seventh grade year was used for students participating in the study. For the purposes of this study, time limitations prevented the use of the cumulative eighth grade, grade point averages. The mean grade point average of the first semester of the school year was used in place of the cumulative grade point average for the eighth grade.

The discipline system used at this school involves the use of discipline referrals (Appendix B) as a way to document and track discipline issues that students may have while in classes. This school began tracking discipline referrals using an electronic data base during the academic school year of 2005-2006. From the use of this database the total amount of referrals accumulated during the seventh grade year by the students participating in the study was given to the researcher in a Microsoft Excel file by the administrative assistant. For the purposes of this study the amount of accumulated referrals for the first semester of the eight grade year of the same students used was given to the researcher in place of the total amount of referrals due to time constraints.

### *Results*

The findings are presented using archival data from n=56 students. After

receiving the results from the administrative assistant tables and graphs were made to present the results in a cohesive manner. It was found that in the coeducational group (N=10) over the seventh and eighth grade year's grade point averages (see Table 1.) increased on average as shown in Figure 1. and Figure 2.

A Pearson correlation addressed the relationship between GPA and discipline referrals for the seventh grade year and GPA and discipline referrals for the eighth grade year as shown in Tables 2 and 2.1. A correlation coefficient of -.22 shows that there is not a significant correlation between GPA and number of discipline referrals for the coeducational cluster during the seventh grade year. A correlation coefficient of .26 shows that there is not a significant correlation between GPA and number of discipline referrals for the coeducational cluster during the eighth grade year.

Table 1. *Coeducation GPA's and Number of Discipline Referrals*

Grade point average grade 7	Grade point average grade 8	Difference in grade point average	# of Discipline referrals grade 7	# of Discipline referrals grade 8
1.94	1.93	-0.01	0	7
3.17	3.25	0.08	0	2
1.67	1.5	-0.17	8	5
2.72	2.9	0.18	0	5
2.56	2.73	0.17	11	11
1.5	2.35	0.85	7	9
0.22	1.87	1.65	3	8
0	0	0	6	0
2.11	2.62	0.51	0	0
1.39	1.21	-0.18	1	5

Figure 1. *Difference in Average Coeducation GPA*

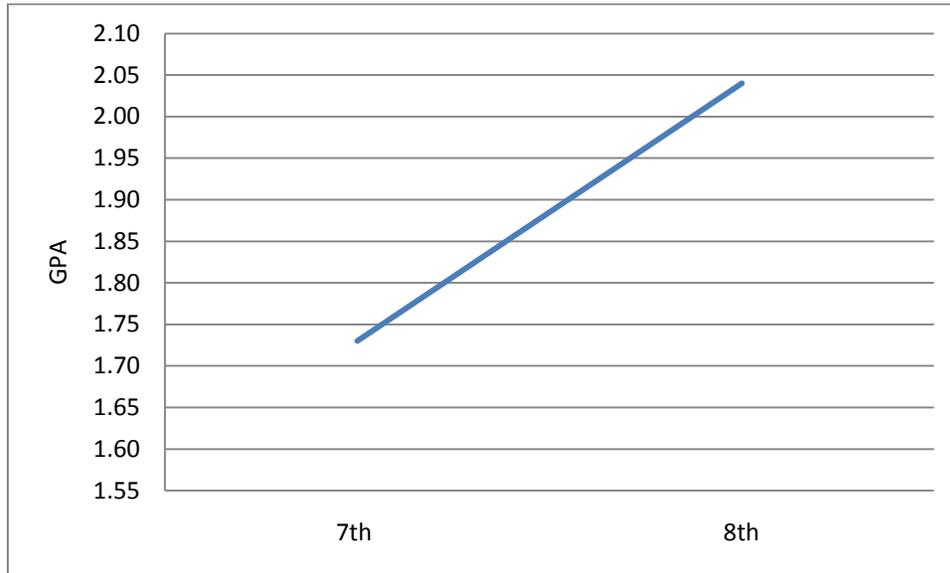


Figure 2. *Coeducation GPA*

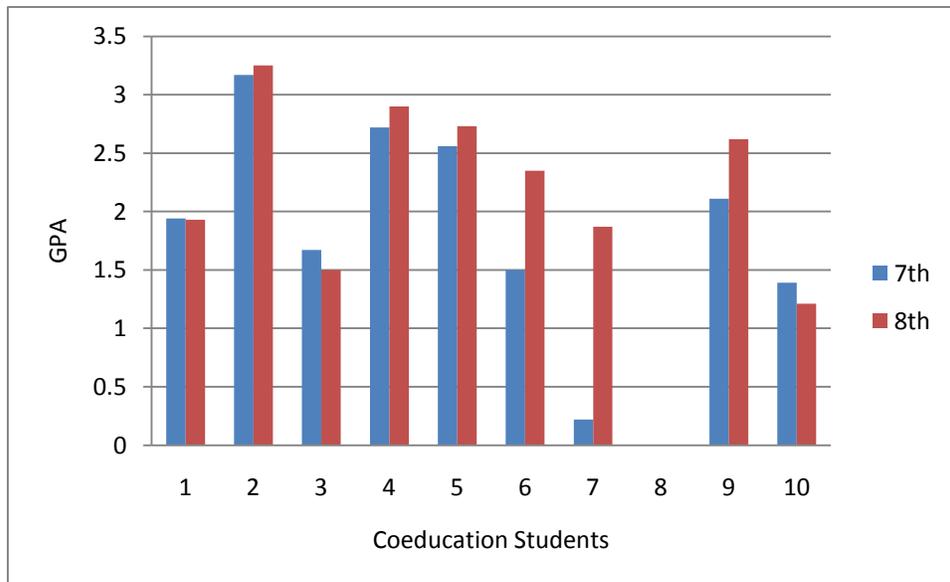


Table 2. *Correlation between Coeducation GPA's and Discipline Referrals Grade 7*

		Coeducational Correlations 7 <sup>th</sup>	
		Grade7	Referral7
Grade7	Pearson Correlation	1.000	-.217
	Sig. (2-tailed)		.548
	N	10	10
Referral7	Pearson Correlation	-.217	1.000
	Sig. (2-tailed)	.548	
	N	10	10

Table 2.1. *Correlation between Coeducation GPA's and Discipline Referrals Grade 8*

		Coeducational Correlations 8th	
		Column1	Referral8
Grade 8	Pearson Correlation	1.000	.260
	Sig. (2-tailed)		.468
	N	10	10
Referral8	Pearson Correlation	.260	1.000
	Sig. (2-tailed)	.468	
	N	10	10

\*\* . Correlation is significant at the 0.01 level (2-tailed).

It was found that in the female cluster (N=24) over the seventh and eighth grade years grade point averages (see Table 3) decreased on average as shown in Figure 3 and Figure 4. Also in as shown in Table 3 the number of discipline referrals seems to have increased from the seventh grade to the eighth grade.

A Pearson correlation addressed the relationship between GPA and discipline referrals for the seventh grade year and GPA and discipline referrals for the eighth grade year as shown in Tables 4 and 4.1 for the female cluster. A correlation coefficient of  $-.11$  shows that there is not a significant correlation between GPA and number of discipline referrals for the female cluster during the seventh grade year. A correlation coefficient of  $-.382$  (sig.  $=.065$ ) showed that there is a moderate relationship between discipline referrals and GPA during the eighth grade year for the female cluster. The relationship is negative indicating that there is an inverse relationship between GPA and amount of discipline referrals. Although the relationship is moderate, as GPA decreases the number of referrals increases during the eighth grade year for the female cluster.

Table 3. *Female Cluster GPA's and Discipline Referrals*

Grade point average Grade 7	Grade point average Grade 8	Difference in Grade Point Average	# of Discipline Referrals Grade 7	# of Discipline Referrals Grade 8
3.39	3.06	-0.33	0	0
1.28	4.42	3.14	0	0
3.39	3.18	-0.21	0	1
2.72	2.17	-0.55	0	0
4.33	4.07	-0.26	0	0
3.28	2.89	-0.39	0	2
3.44	2.74	-0.7	0	2
3.39	2.46	-0.93	1	4
3.5	3.28	-0.22	0	0
2.83	2.91	0.08	0	1
2.17	1.23	-0.94	0	2
4.25	3.65	-0.6	0	0
3.61	3.16	-0.45	0	0
4.22	3.75	-0.47	0	0
2.89	1.23	-1.66	0	1
3.44	3.17	-0.27	0	0
3.61	3.33	-0.28	0	0
4	3.65	-0.35	0	0
3.39	2.73	-0.66	0	0
3.28	2.83	-0.45	0	0
3.11	2.66	-0.45	0	0
3.94	3.44	-0.5	0	3
2.94	2.68	-0.26	2	3
4	3.74	-0.26	0	0

Figure 3. *Difference in Average Female GPA*

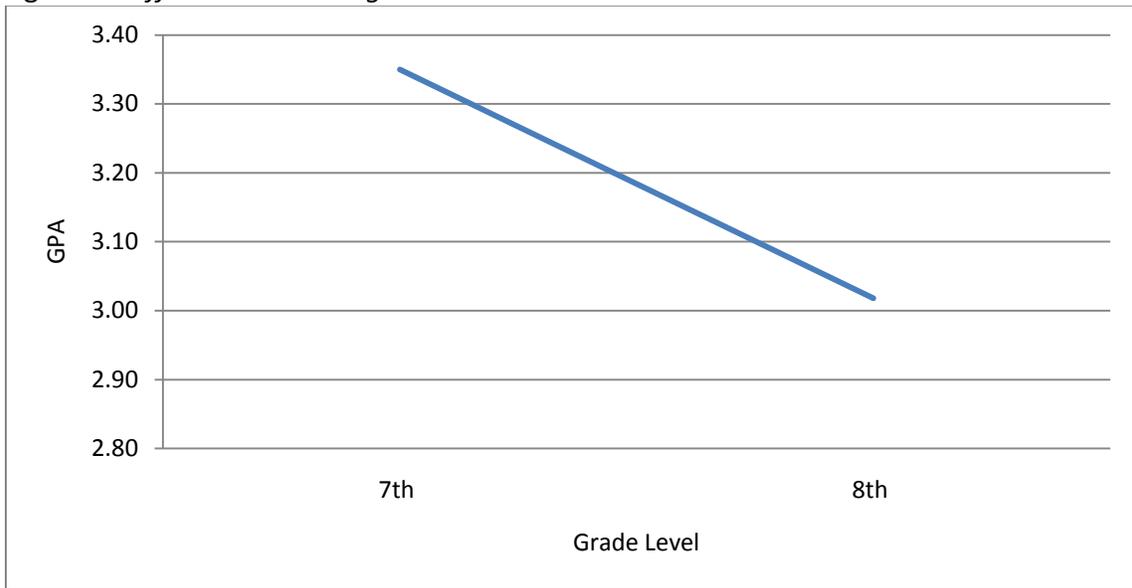


Figure 4. *Female GPA*

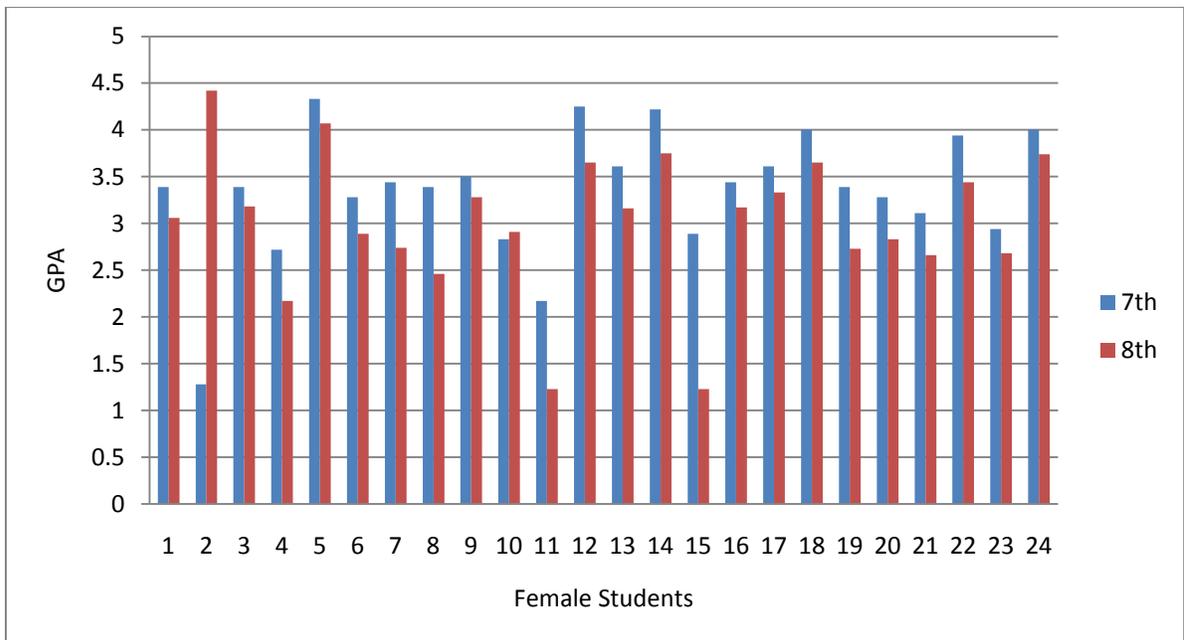


Table 4. *Correlation between Female Cluster GPA's and Discipline Referrals Grade 7*

		Females Correlations 7th	
		7th	Referral 7
Grade 7	Pearson Correlation	1.000	-.111
	Sig. (2-tailed)		.606
	N	24	24
Ref 7	Pearson Correlation	-.111	1.000
	Sig. (2-tailed)	.606	
	N	24	24

Table 4.1. *Correlation between Female Cluster GPA's and Discipline Referrals Grade 8*

		Female Correlations 8th	
		8th	Referral 8
Grade 8	Pearson Correlation	1.000	-.382
	Sig. (2-tailed)		.065
	N	24	24
Ref 8	Pearson Correlation	-.382	1.000
	Sig. (2-tailed)	.065	
	N	24	24

It was found that in the male cluster (N=22) over the seventh and eighth grade, grade point averages (see Table 5) increased on average as shown in Figure 5 and Figure 6. Also as shown in Table 5 the number of discipline referrals increased from the seventh grade to the eighth grade depending on the GPA. As GPA increased the number of referrals decreased. And as GPA decreased the number of referrals increased over the course of the seventh and eighth grade years among the male cluster.

A Pearson correlation addressed the relationship between GPA and discipline referrals for the seventh grade year and GPA and discipline referrals for the eighth grade year as shown in Tables 6 and 6.1. A correlation coefficient of  $-.59$  (sig. =  $.003$ ) shows that there is a significant correlation between GPA and number of discipline referrals for the male cluster during the seventh grade year. A correlation coefficient of  $-.62$  (sig. =  $.002$ ) shows that there is a relationship between discipline referrals and GPA during the eighth grade year for the male cluster. The relationships are negative indicating that there is a negative relationship between GPA and amount of discipline referrals. This is a strong relationship indicating that as GPA increases the number of discipline referrals decreases and as GPA decreases the number of discipline referrals increases.

Table 5: Male Cluster GPA's and Number of Discipline Referrals

Grade point average Grade 7	Grade point average Grade 8	Difference in Grade Point Average	# of Discipline Referrals Grade 7	# of Discipline Referrals Grade 8
2.72	2.86	0.14	0	2
2.78	2.98	0.2	0	0
2.94	3.37	0.43	0	0
1.61	2.77	1.16	2	0
2.9	3.23	0.33	2	2
0	0.07	0.07	7	18
3.5	3.88	0.38	0	0
1.72	2.29	0.57	0	1
1.67	2.67	1	5	3
0.22	1.82	1.6	1	1
1.72	1.84	0.12	0	1
2.56	2.79	0.23	0	1
0.11	0.47	0.36	2	4
2.61	2.3	-0.31	2	2
3.1	2.34	-0.76	0	1
3	3.41	0.41	0	1
0	0.98	0.98	4	2
3.44	3.56	0.12	0	0
3.06	3.28	0.22	0	0
0.5	1.08	0.58	0	0
3.56	3.86	0.3	0	0
1.44	2.11	0.67	2	4

Figure. 5 *Difference in average male GPA*

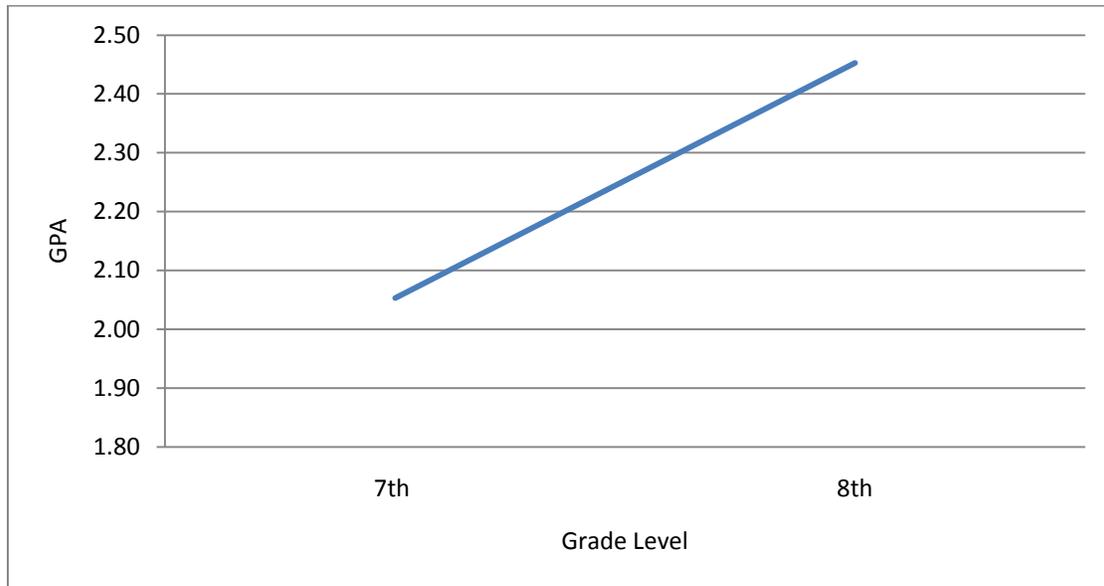


Figure 6. *Male GPA*

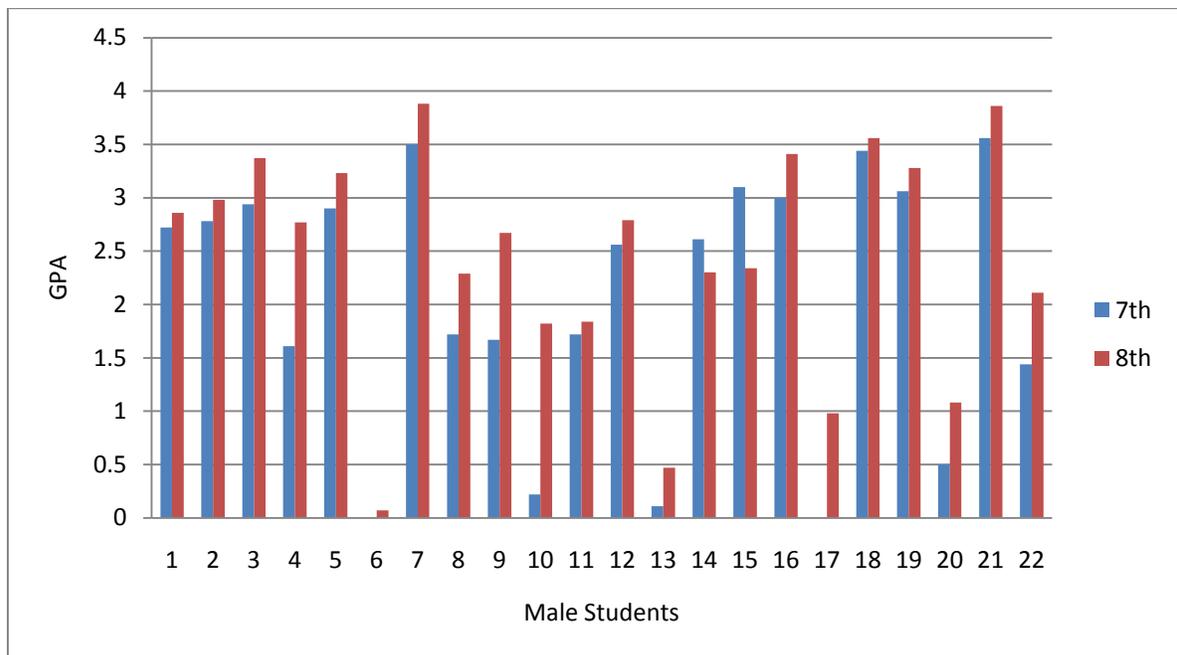


Table 6: Correlation between Male Cluster GPA's and Discipline Referrals Grade 7

		Males Correlations 7 <sup>th</sup>	
		7th	Referral 7
Grade 7	Pearson Correlation	1.000	-.598**
	Sig. (2-tailed)		.003
	N	22	22
Ref. 7	Pearson Correlation	-.598**	1.000
	Sig. (2-tailed)	.003	
	N	22	22

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 6.1: Correlation between Male Cluster GPA's and Discipline Referrals Grade 8

		Males Correlations 8 <sup>th</sup>	
		8th	Referral 8
Grade 8	Pearson Correlation	1.000	-.622**
	Sig. (2-tailed)		.002
	N	22	22
Ref. 8	Pearson Correlation	-.622**	1.000
	Sig. (2-tailed)	.002	
	N	22	22

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## Discussion

Data were collected to determine if separating students by gender had a positive or negative effect on academics and behavior. Interestingly, gender separation seemed to have had some positive and negative effects. The male cluster produced higher overall GPAs which seemed to have positive effects on number of discipline referrals received during the seventh and eighth grade. In the male cluster the higher the GPA the lower amount of discipline referrals a student received. The male cluster overall increased GPA while in gender specific classes. It was shown that improving male GPA decreased classroom behavior problems. These findings are consistent with the hypothesis; the school's attempt at gender separation has had some improvements in academics and decreased behavior problems that resulted in referrals for the male cluster. Sax,( 2005) & Warrington & Younger, (2005) also found that boys fair better academically when girls are not in the classroom and tend to work harder for lack of fear of seeming feminine.

The female cluster had some negative effects, with a decrease of overall GPA and negative correlation between GPA and discipline referrals in the eighth grade. The overall GPA for the female cluster is significantly higher than the coeducational and male clusters. Although the female cluster did decrease in GPA, the female cluster maintains a higher GPA than both the male and coeducational cluster during the seventh and eighth grade. According to researchers, girls in gender specific classrooms are supposed to do better academically and maintain confidence in male dominated

subjects such as math and science (Boyd & Kirschenbaum, 2007). During the middle school years girls have more trouble transitioning than boys do which may affect academics and behavior (Salomone, 2003).

The coeducational cluster also increased GPA during the course of the study. There were no significant correlations between behavior and GPA. The coeducational cluster maintained a balance between GPA and behavior which may suggest that coeducation is successful and that there is no need to consider gender separation in public middle schools. Advocates for coeducation suggest that having both genders learning together offers a balance and prepares students for the real world (Shmurak, 1998).

#### *Limitations*

The initial design of the research was to include a survey (Appendix C) created by the researcher to inquire about the teacher's perception of students under the following categories: Behavior, Time Management, and Communication. The administration of the survey was interrupted due to coeducation of all classes in the eighth grade during the researcher's duration of analyzing the data. The researcher could have potentially conducted the survey; however the results would have been the teacher's opinion about classes that were no longer in existence. The reason given to the researcher by a Professional School Counselor for the coeducation of classes was that the female teachers and female students were experiencing menstrual synchrony. Menstrual synchrony is defined as females living or working together that have the menstrual cycles that may occur within a few days of one another (McClintock, 1971).

Menstrual synchrony prompted the female teachers to advocate for the integration of classes to maintain a balance among the female cluster.

The gender specific classes analyzed were the only true gender specific classes in the eighth grade carrying over from the gender specific classes during the seventh grade. The school attempted to have various classes that were gender specific. Under specific request by parents counselors decided to integrate classes based on specific request made by parents. Integration of single gender classes made it difficult for the researcher to obtain data for true gender specific and coeducational classes.

The collection of the data was given to the researcher by the administrative assistant, which posed a limitation to the study based on the potential for human error. The researcher had to trust that the administrative assistant gave true raw data for each cluster being analyzed and did not make an error, making the information presented false and untrue.

#### *Future Research*

There is much more research that needs to be done on the effectiveness of gender specific education in the public school setting, especially under the new circumstances of gender specific classrooms. Additional research needs to look at the outcomes of single-sex classes in terms of the specific goals set by all stake holders. There is also room for additional research on the community in which the single-sex classes resides. Race, class, and ethnicity of students that are involved should also be considered (Pollard, 1998). Research on parental perception and involvement of gender separation needs to be done in regards to public education. According to Dean (1998)

students that opt for single-sex classes or schools have strong parental support and come from more affluent homes. This research was done in the context of the former gender separation system. Examining the current system and looking at why parents of public educated students may opt for or against single-sex classes may prove to be beneficial for the construction of single-sex programs in the public school.

*Implications for Counselors and other helping professionals*

Gender differences are important factors for school counselors to address, especially if working in a school that adopts gender separation as a form of education. It is important for school counselors to be competent in gender specific issues. Counselors may want to adopt different counseling strategies based on the gender of the student being counseled (Haag, 1998). Counselors may also want to be familiar with gender specific issues that may arise when working in a gender specific school or classroom. When separating students by gender counselors have to be careful not to over generalize and begin gender stereotyping (Haag, 1998).

According to Shmurak (1998) there are forms of sexism that occur in gender specific classes. In boys schools sexism was in forms of talking about girls as sex objects. In coeducational schools sexism came in the form of differential treatment of boys and girls in science classes. In female schools sexism was in the form of teaching girls to be dependent on males or teaching material in a non rigorous way (Shmurak, 1998).

Counselors and other professionals may want to be aware of isms such as sexism at all times and advocate for students that are not being treated fairly by teaching staff. Counselors also may want to make students aware of some stereotypes that may be

perpetuated by behavior in the home and then reflect on behaviors at that may be exhibited at school. This may be done with both individual and group counseling.

While examining the reasons why students may want to be in single gender classes, M.C.B. (2008) found that there was heightened self-confidence in gender specific classes. Counselors may want to take this information and examine why students gained higher self confidence. Counselors may also want to utilize the heightened self confidence in students to improve in other areas of the student's academic and social/emotional development.

Counselors working in coeducational school may have to counsel students having issues with students trying to impress the opposite sex. According to Arms & Herr (2002) students are distracted with the "rating and dating" culture, where students are more focused on fashion and appearance than on academics (p. 75). In a gender specific school counselors do have to address the issues of trying to impress. Trying to impress people is the issue and regardless of gender specific school or coeducational school, counselors may want to address the need for students to want to impress people in general. Counselors may want to conduct a needs assessment for particular students that may benefit more from a group counseling effort focusing on the need to impress others.

According the Salomone (2003) boys are failing academically, emotionally, and socially. Boys are depressed and suicidal. This statement seems to suggest that it is important for counselors to look at the differences between males and females when dealing with depression. Girls will attempt suicide more than boys however boys that do

attempt suicide successfully complete the attempt (Salomone, 2003). Counselors need to know the differences in personality types and tendencies of each gender so that counseling techniques and strategies can reflect these differences.

Separating students by gender is not a new phenomenon. As noted in the previous research project, education history and education law explains the depths of gender separation in the United States and abroad. As educators, counselors and parents continue to look for ways to improve the public education system, the recycling of old ways to educate are being revisited in the public school system. Gender separation is one current trend that is being investigated as a form of educational reform. As the public school system continues to fail there will be more innovative and traditional ways to try to improve the system. As counselors it is important to stay in the loop of the educational trend to protect students from its many pitfalls that educators and policy makers tend to forget while creating policy. It is important to remember that providing a quality education requires support from all stakeholders involved. As time changes people change and it is important to progress with the times. If providing gender specific education is what is best for some students of today, then all stakeholders need to take a critical look at implementing gender specific education properly in public schools.

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Appendix A

Report Card

Copy of Report Card

Appendix B

Discipline Referral

Copy of referral

Appendix C

Teacher Survey

Copy of Survey